AMENDMENTS TO THE SPECIFICATION:

Page 1, immediately preceding the paragraph commencing "The present invention is concerned with…" insert the following heading and sub-heading:

BACKGROUND

       1. Technical Field

Page 1, immediately preceding the paragraph commencing "In general, the response may…" insert the following sub-heading:

       2. Related Art

Page 2, line 23: delete "According to the present invention there is provided …" and insert the following headings and paragraph:

BRIEF SUMMARY

A signal is filtered by multiplying its Fourier transform by the Fourier transform of a reference sequence to which the filtering is to be matched. The reference sequence (e.g., a Golay sequence pair) is defined as an iterative combination of shorter sequences and its Fourier transform is generated by an iterative process of combining the Fourier transforms of a shorter starting sequence.

BRIEF DESCRIPTION OF THE DRAWINGS

Page 2, paragraph commencing at line 24:

Some embodiments of the present invention will now be described, by way of example, with reference to the accompanying drawings, in which

Fig. 1 is a block diagram of a conventional matched filter;

Fig. 2 is a block diagram of a matched filter operating in accordance with one embodiment of the invention; and

Fig. 3 is a timing diagram with one example of a pulse sequence utilized in the system of Fig. 2.

DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENTS

Pages 2-3, bridging paragraph:

A signal r(t) to be filtered (perhaps the response received in an imaging application), and sampled at intervals τ is received at an input 1 and subjected at 2 to the fast Fourier transform to produce a frequency domain signal R(f). A reference signal s(t) (perhaps the original signal in an imaging application) representing the signal that the filter is to match, and consisting of regular pulses at intervals λ, is received at an input 3

- 3 -

and subjected at 4 to the fast Fourier transform to produce a frequency domain signal

$S(f)$. Note that the different symbols τ, λ are used for generality; in the conventional

system $\lambda=\tau$ and the Fourier transforms are generated for discrete frequencies which are

multiples of $1/2N\lambda=1/2N\tau$. It is observed that, in the imaging application, this is

perfectly satisfactory provided that the receiver of [[R(t)]] r(t) has a timing reference that

is ~~synchronised~~ synchronized to that used to generate the original signal $s(t)$, and the

phenomena being observed are perfectly stationary.

Page 4, 2nd full paragraph:

Any binary codeword can be ~~generate~~ generated from a single "1" by a

combination of concatenation and inversion steps (and of course this also applies to the

iteration formula given above for generating examples of Golay sequence pairs).

Page 10, top of page, delete "CLAIMS" and insert:

WHAT IS CLAIMED IS:

1410895